

NASA TECH BRIEF



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Freon, T-B1 Cutting Fluid

The problem:

To develop a clean nonoily machining fluid that will prolong tool life, increase product quality, and clean the cutting tool and the material being worked. This compound could replace less efficient contaminating oils now used in machining operations.

The solution:

An improved cutting fluid that completely controls the heat generated from machining operations, thus providing longer tool life, especially in the working of plastics. Because of the removal of material build-up on tool edges, Freon, T-B1 has a greater consistency than other cutting compounds. Loading (galling) is completely eliminated with a proper and measured application of the fluid. Decontamination of tools and materials is not required. Until recently contaminating oils were used in most machining operations.

How it's done:

Freon, T-B1 is based on a double-acting principle in which (1) cooling is accomplished by rapid evaporation of the TF solvent giving an instantaneous refrigerating action and (2) lubrication is accomplished by 2-butoxyethanol which provides a slightly more lasting liquid feature as a lube balance.

Dispensers for T-B1 are designed to take full advantage of the characteristics of this compound making possible an economical operation as well as pro-

duct improvement. Two such dispensers have been developed: (1) a plastic bottle with a gravity feed from simple needle valves, the fluid being directed on the tool by accessory tubing and nozzles and (2) a Gelman pressure can (Kelite dispenser) fitted with regulators for shop air (2 to 15 psi) and accessories similar to those above.

Notes:

1. Freon, T-B1 could be of interest to that segment of industry which machines structural and non-structural plastics as well as honeycombed materials. Also, this compound should be particularly useful to those companies engaged in machining operations conducted in "clean rooms."
2. No additional documentation for this item is available. Inquiries may be directed to:
Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B69-10485

Patent status:

No patent action is contemplated by NASA.

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